INDEX OF SUBJECTS

Abelmoschus esculentus, see Okra

An Adventure in Applied Science: a History of the International Rice Research Institute, by R. F. Chandler, reviewed by N. W. Simmonds, 278

Agricultural Research Policy, by V. W. Ruttan, reviewed by W. S. Wise, 199

Agroforestry Systems, an International Journal, ed. by H. J. von Maydell, reviewed by M. G. R. Cannell, 277

Alfalfa, effect of the germinating seed environment on yields (Haller), 55

Alfisols of the semi-arid tropics of India, cereal/pigeonpea intercropping and the effects of genotype (Rao and Willey), 67

Arachis hypogaea, see Groundnut

Beans, intercropping with sorghum or maize under two fertility regimes in Northeastern Brazil (Faris, Burity, Dos Reis and Mafra), 251

Biological Control, by Robert van den Bosch, P. S. Messenger and A. P. Gutierrez, reviewed by H. F. Van Emden, 280

Biological Control of Weeds with Plant Pathogens, ed. by R. Charudattan and H. L. Walker, reviewed by M. P. Greaves, 277

Biological Husbandry, ed. by B. Stonehouse, reviewed by D. S. Jenkinson, 111

Biomass as Fuel, by L. P. C. White and L. G. Plaskett, reviewed by J. A. Clark, 199

Biomass production of 32 *Prosopis* (Mesquite) accessions, effects of irrigation (Felker, Cannell, Osborn, Clark and Nash), 187

The Biometry of Plant Growth, by D. R. Causton and J. C. Venus, reviewed by C. A. Glasbey, 279

Building a Sustainable Society, by Lester R. Brown, reviewed by N. W. Simmonds, 111

Cajanus cajan, see Pigeonpea

Calculators – how to get the answers right (Ryder), 15

Cereal/pigeonpea intercropping on the Alfisols of the semi-arid tropics of India, effects of genotype (Rao and Willey), 67

Coconut canopies, evaluation of tropical grasses in increasing shade underneath (Smith and Whiteman), 153

Cotton, nitrogen uptake: I. Distribution in plant components in relation to fertilization and yield (Oosterhuis, Chipamaunga and Bate), 91; II. Nitrate reductase activity and petiole nitrate concentration as indicators of plant nitrogen status (Oosterhuis and Bate), 103

Cowpea, use of planting dates in the preliminary evaluation of new cultivars (Ashok Kumar and Abrol), 169

Cowpeas and maize intercropped, nutrient uptake and a concept of Nutrient Supplementation Index (NSI) (Wahua), 263

Cowpeas, performance on an inland valley swamp in the dry season in Sierra Leone (Rhodes), 179

Cowpeas, intercropping with sorghum or maize under two fertility regimes in Northeastern Brazil (Faris, Burity, Dos Reis and Mafra), 251

Crop Protection – An International Journal of Pest, Disease and Weed Control, ed. by G. E. Russell, reviewed by J. H. Lennard, 200

Crop–weed competition studies in mung beans (Yadav, Bhan and Singh), 337

Cultural practices, effects on growth, yield and economics of fibre flax production in the North Western Himalayas (Guleria and Singh), 87

Dinitrogen fixation and nodulation in groundnut, effect of intercropping (Nambiar, Rao, Reddy, Floyd, Dart and Willey), 79

Dinitrogen fixation and nodulation in groundnut, effect of *Rhizobium* numbers (Nambiar, Ravishankar and Dart), 243

Dormancy of rice seeds, effects of cropping seasons and temperatures (Sikder), 349

Dry season performance of cowpeas on an inland valley swamp in Sierra Leone (Rhodes), 179

Economic Analysis of Agricultural Projects, by J. P. Gittinger, reviewed by W. S. Wise, 281

Economics, growth and yield of fibre flax in the North Western Himalayas, effects of cultural practices (Guleria and Singh), 87
Environment at maturation, effects on seed size and subsequent plant growth in peas (Kant, Sharma and Tyagi), 333

Fertility maintenance in the soils of tropical Africa, reviewed from fifty years of *Experimental Agriculture* (Watts Padwick), 293
Fertility regimes and intercropping of sorghum or maize with cowpeas or common beans in Northeastern Brazil (Faris, Burity, Dos Reis and Mafra), 251
Fertilizing for Maximum Yield, by G. W. Cooke, reviewed by K. Simpson, 361
Fibre flax production in the North Western Himalayas, effects of cultural practices on growth, yield and economics (Guleria and Singh), 87
Flax, *see* Fibre flax
Fluorescent-dye technique for the rapid measurement of root length (McGowan, Armstrong and Corrie), 209
Food crops and trees, the development of mixed systems in the humid tropics in response to population pressure and deforestation (Watson), 311
Food, Nutrition and Climate, ed. by K. L. Blaxter and L. Fowden, reviewed by J. M. M. Cunningham, 199

Genotype effects in cereal/pigeonpea intercropping on the Alfisols of the semi-arid tropics of India (Rao and Willey), 67
Grain legumes, effect on the nitrogen requirement of a following wheat crop (Narwal, Malik and Malik), 143
Graphical assessment of data from intercropping factorial experiments (Gulliver and Pearce), 23
Grasses, *see* Tropical grasses
Groundnut, effect of intercropping on nodulation and dinitrogen fixation (Nambiar, Rao, Reddy, Floyd, Dart and Willey), 79
Groundnut, effect of *Rhizobium* numbers on nodulation and dinitrogen fixation (Nambiar, Ravishankar and Dart), 243
Groundnut improvement, use of natural hybrids (Nigam, Ramanatha Rao and Gibbons), 355
Groundnuts, hydraulic press measurements of leaf water potential (Rajendrudu, Singh and Williams), 287
A Growing Problem. Pesticides and the Third World Poor, by David Bull, reviewed by H. F. Van Emden, 280
Growth of peas, effects of seed maturation environment (Kant, Sharma and Tyagi), 333
Gypsum, effects on five tropical grasses grown in normal and extremely sodic soil (Ashok Kumar and Abrol), 169

Harvesting policy and nitrogen application rates, effects on the production of tea in Central Africa: I. Yield and crop distribution (Cloughley, Grice and Ellis), 33; II. Quality and total value of the crop (Cloughley), 47
Herbicide Resistance in Plants, ed. by H. M. Le Baron and J. Gressel, reviewed by R. J. Hance, 361
Hydraulic press measurements of leaf water potential in groundnuts (Rajendrudu, Singh and Williams), 287

Insects, Experts and the Insecticide Crisis, by John H. Perkins, reviewed by H. F. Van Emden, 280
Intercropping cereals and pigeonpea on the Alfisols of the semi-arid tropics of India, effects of genotype (Rao and Willey), 67
Intercropping factorial experiments, graphical assessment of data (Gilliver and Pearce), 23
Intercropping groundnut, effect on nodulation and dinitrogen fixation (Nambiar, Rao, Reddy, Floyd, Dart and Willey), 79
Intercropping maize and cowpeas, nutrient uptake and a concept of Nutrient Supplementation Index (NSI) (Wahua), 263
Intercropping, *see also* Mixed systems
Intercropping sorghum or maize with cowpeas or common beans under two fertility regimes in Northeastern Brazil (Faris, Burity, Dos Reis and Mafra), 251
Irrigation effects on biomass production of 32 *Prosopis* (Mesquite) accessions (Felker, Cannell, Osborn, Clark and Nash), 187

Land Evaluation, by S. G. MacRae and C. P. Burnham, reviewed by J. S. Bibby, 111
Leaf water potential in groundnuts, hydraulic

press measurements (Rajendrudu, Singh and Williams), 287
Lettuce root growth and water use, some effects of soil compaction (Carr and Dodds), 117

Maize and cowpeas intercropped, nutrient uptake and a concept of Nutrient Supplementation Index (NSI) (Wahua), 263
Maize, intercropping with cowpeas or common beans under two fertility regimes in Northeastern Brazil (Faris, Burity, Dos Reis and Mafra), 251
Maize/weed competition experiments, implications for tropical small-farm weed control research (Vernon and Parker), 341
Maize yield and nitrogen response to the residual effect of pigeonpea (Kumar Rao, Dart and Sastry), 131
Mesquite, effects of irrigation on biomass production of 32 accessions (Felker, Cannell, Osborn, Clark and Nash), 187
Mixed systems of tree and food crops, their development in the humid tropics in response to population pressure and deforestation (Watson), 311
Modern Irrigated Soils, by D. W. James, R. J. Hanks and J. J. Jurinak, reviewed by B. Eavis, 361
Multiple Cropping and Tropical Farming Systems, by W. C. Beets, reviewed by C. C. Webster, 362
Multiple cropping studies. II. Effects of preceding grain legumes on the nitrogen requirements of wheat (Narwal, Malik and Malik), 143
Mung beans, crop–weed competition studies (Yadav, Bhan and Singh), 337

Nitrogen and yield response of maize to the residual effect of pigeonpea (Kumar Rao, Dart and Sastry), 131
Nitrogen application rates and harvesting policy, effects on the production of tea in Central Africa: I. Yield and crop distribution (Cloughley, Grice and Ellis), 33; II. Quality and total value of the crop (Cloughley), 47
Nitrogen fertilizer and spacing effects on okra 'Pusa Sawani' in Nepal (Shrestha), 239
Nitrogen fixation, *see* dinitrogen fixation
Nitrogen requirement of wheat when preceded by grain legumes (Narwal, Malik and Malik), 143
Nitrogen uptake of field-grown cotton: I. Distribution in plant components in relation to fertilization and yield (Oosterhuis, Chipamaunga and Bate), 91; II. Nitrate reductase activity and petiole nitrate concentration as indicators of plant nitrogen status (Oosterhuis and Bate), 103
Nodulation and dinitrogen fixation in groundnut, effect of intercropping (Nambiar, Rao, Reddy, Floyd, Dart and Willey), 79
Nodulation and dinitrogen fixation in groundnut, effect of *Rhizobium* numbers (Nambiar, Ravishankar and Dart), 243
Nutrient Supplementation Index (NSI) concept and nutrient uptake by intercropped maize and cowpeas (Wahua), 263

Okra 'Pusa Sawani' in Nepal, effects of spacing and nitrogen fertilizer (Shrestha), 239
Oryza sativa, see Rice

Peas, effects of maturation environment on seed size and subsequent plant growth (Kant, Sharma and Tyagi), 333
Perennial crops in the tropics, potential productivity (Corley), 217
Pigeonpea/cereal intercropping on the Alfisols of the semi-arid tropics of India, effects of genotype (Rao and Willey), 67
Pigeonpea, residual effect on yield and nitrogen response of maize (Kumar Rao, Dart and Sastry), 131
Pisum sativum, see Peas
Plant Growth Curves – The Functional Approach to Plant Growth, by R. Hunt, reviewed by C. A. Glasbey, 279
Plant Nutrition 1982. Proceedings of the Ninth International Plant Nutrition Colloquium, ed. by A. Scaife, reviewed by G. W. Cooke, 281
Plantation Forestry in the Tropics, by J. Evans, reviewed by Laurence Roche, 200
Planting dates, their use in the evaluation of new cowpea cultivars (Ashok Kumar and Abrol), 169
Primrose McConnell's Agricultural Notebook, ed. by R. J. Halley, reviewed by G. W. Cooke, 281
Productivity potential of tropical perennial crops (Corley), 217
Prosopis, see Mesquite

Rhizobium numbers, effect on nodulation

and dinitrogen fixation in groundnut (Nambiar, Ravishankar and Dart), 243
Rice seed dormancy, effects of cropping seasons and temperatures (Sikder), 349
Root growth and water use of lettuce, some effects of soil compaction (Carr and Dodds), 117
Root length measurement using a rapid fluorescent-dye technique (McGowan, Armstrong and Corrie), 209

Seed dormancy in rice, effects of cropping seasons and temperatures (Sikder), 349
Seed environment, effect on crop yields. I. Effect of soil acidity at germination on yields of sweet clover and alfalfa (Haller), 55
Seed size of peas, effects of maturation environment (Kant, Sharma and Tyagi), 333
Shade under coconut canopies, evaluation of tropical grasses for (Smith and Whiteman), 153
Small-farm weed control research in the tropics, implications of maize/weed competition experiments (Vernon and Parker), 341
Soil compaction, some effects on root growth and water use of lettuce (Carr and Dodds), 117
Soil fertility maintenance in tropical Africa, reviewed from fifty years of *Experimental Agriculture* (Watts Padwick), 293
Soils and the Environment, by Gerald W. Olson, reviewed by K. Simpson, 112
Sorghum, intercropping with cowpeas or common beans under two fertility regimes in Northeastern Brazil (Faris, Burity, Dos Reis and Mafra), 251
Spacing and nitrogen fertilizer effects on okra 'Pusa Sawani' in Nepal (Shrestha), 239
Strategies of Plant Reproduction, ed. by W. Meudt, reviewed by N. W. Simmonds, 279
Sweet clover, effect of the germinating seed environment on yields (Haller), 55

Tea, effects of harvesting policy and nitrogen application rates on production in Central Africa: I. Yield and crop distribution (Cloughley, Grice and Ellis), 33; II. Quality and total value of the crop (Cloughley), 47
Temperature and cropping season effects on the dormancy of rice (Sikder), 349
Tree and food crops, the development of mixed systems in the humid tropics in response to population pressure and de-forestation (Watson), 311
Tropical Agriculture. The Development of Production, by Gordon Wrigley, reviewed by D. C. P. Evans, 362
Tropical grasses, effects of gypsum when grown in normal and extremely sodic soil (Ashok Kumar and Abrol), 169
Tropical grasses, evaluation in increasing shade under coconut canopies (Smith and Whiteman), 153
Tropical perennial crops, potential productivity (Corley), 217
Vigna radiata, see Mung beans

Water use and root growth of lettuce, some effects of soil compaction (Carr and Dodds), 117
Weed-crop competition studies in mung bean (Yadav, Bhan and Singh), 337
Weed/maize competition experiments, implications for tropical small-farm weed control research (Vernon and Parker), 341
Weed Science Principles and Practices, by C. C. Klingham and F. M. Ashton, reviewed by D. S. H. Drennan, 278
Wheat nitrogen requirement when preceded by grain legumes (Narwal, Malik and Malik), 143

Yams. Ignames, ed. by J. Miege and S. N. Lyonga, reviewed by D. G. Coursey, 277
Yield and nitrogen response of maize to the residual effect of pigeonpea (Kumar Rao, Dart and Sastry), 131
Yield, growth and economics of fibre flax production in the North Western Himalayas, effects of cultural practices (Guleria and Singh), 87
Yields, effect of the germinating seed environment: I. Effect of soil acidity at germination on yields of sweet clover and alfalfa (Haller), 55

INDEX OF AUTHORS

Abrol, I. P., *see* Ashok Kumar
Akingbohungbe, A. E., *see* Fakorede, M. A. B.
Armstrong, M. J., *see* McGowan, M.
Ashok Kumar and Abrol, I. P. Effects of gypsum on five tropical grasses grown in normal and extremely sodic soil, 169

Bate, G. C., *see* Oosterhuis, D. M.
Bhan, V. M., *see* Yadav, S. K.
Bibby, J. S. Review of *Land Evaluation*, by S. G. MacRae and C. P. Burnham, 111
Burity, H. A., *see* Faris, M. A.

Cannell, G. H., *see* Felker, Peter
Cannell, M. G. R. Review of *Agroforestry Systems, an International Journal*, ed. by H. J. von Maydell, 277
Carr, M. K. V. and Dodds, Sara M. Some effects of soil compaction on root growth and water use of lettuce, 117
Chipamaunga, J., *see* Oosterhuis, D. M.
Clark, J. A. Review of *Biomass as Fuel*, by L. P. C. White and L. G. Plaskett, 199
Clark, P. R., *see* Felker, Peter
Cloughley, J. B. Effects of harvesting policy and nitrogen application rates on the production of tea in Central Africa. II. Quality and total value of the crop, 47
Cloughley, J. B., Grice, W. J. and Ellis, R. T. Effects of harvesting policy and nitrogen application rates on the production of tea in Central Africa. I. Yield and crop distribution, 33
Cooke, G. W. Review of *Plant Nutrition 1982. Proceedings of the Ninth International Plant Nutrition Colloquium*, ed. by A. Scaife, 281
Cooke, G. W. Review of *Primrose McConnell's Agricultural Notebook*, ed. by R. J. Halley, 281
Corley, R. H. V. Potential productivity of tropical perennial crops, 217
Corrie, J. A., *see* McGowan, M.
Coursey, D. G. Review of *Yams. Ignames*, ed. by J. Miege and S. N. Lyonga, 277
Cunningham, J. M. M. Review of *Food, Nutrition and Climate*, ed. by K. L. Blaxter and L. Fowden, 199

Dart, P. J., *see* Kumar Rao, J. V. D. K.
Dart, P. J., *see* Nambiar, P. T. C.
Dodds, Sara M., *see* Carr, M. K. V.
Dos Reis, O. V., *see* Faris, M. A.
Drennan, D. S. H. Review of *Weed Science Principles and Practices*, by C. C. Klingham and F. M. Ashton, 278

Eavis, B. Review of *Modern Irrigated Soils*, by D. W. James, R. J. Hanks and J. J. Jurinak, 361
Ellis, R. T., *see* Cloughley, J. B.
Evans, D. C. P. Review of *Tropical Agriculture. The Development of Production*, by Gordon Wrigley, 362

Fakorede, M. A. B., Akingbohungbe, A. E. and Ogunbodede, B. A. Use of planting dates in the preliminary evaluation of new cowpea cultivars, 163
Faris, M. A., Burity, H. A., Dos Reis, O. V. and Mafra, R. C. Intercropping of sorghum or maize with cowpeas or common beans under two fertility regimes in Northeastern Brazil, 251
Falker, Peter, Cannell, G. H., Osborn, J. F., Clark, P. R. and Nash, P. Effects of irrigation and biomass production of 32 *Prosopis* (Mesquite) accessions, 187
Floyd, C. N., *see* Nambiar, P. T. C.

Gibbons, R. W., *see* Nigam, S. N.
Gilliver, B. and Pearce, S. C. A graphical assessment of data from intercropping factorial experiments, 23
Glasbey, C. A. Review of *Plant Growth Curves - The Functional Approach to Plant Growth*, by R. Hunt, 279
Glasbey, C. A. Review of *The Biometry of Plant Growth*, by D. R. Causton and J. C. Venus, 279
Greaves, M. P. Review of *Biological Control of Weeds with Plant Pathogens*, ed. by R. Charudattan and H. L. Walker, 277
Grice, W. J., *see* Cloughley, J. B.
Guleria, W. S. and Singh, C. M. Effects of cultural practices on growth, yield and economics of fibre flax production in the North Western Himalayas, 87

Haller, E. Effect of the germinating seed environment on crop yields. I. Effect of soil acidity at germination on yields of sweet clover and alfalfa, 55

Hance, R. J. Review of *Herbicide Resistance in Plants*, ed. by H. M. Le Baron and J. Gressel, 361

Jenkinson, D. S. Review of *Biological Husbandry*, ed. by B. Stonehouse, 111

Kant, K., Sharma, B. and Tyagi, M. C. Effects of maturation environment on seed size and subsequent plant growth in peas (*Pisum sativum*), 333
Kumar Rao, J. V. D. K., Dart, P. J. and Sastry, P. V. S. S. Residual effect of pigeonpea (*Cajanus cajan*) on yield and nitrogen response of maize, 131

Lennard, J. H. Review of *Crop Protection – An International Journal of Pest, Disease and Weed Control*, ed. by G. E. Russell, 200

Mafra, R. C., *see* Faris, M. A.
Malik, D. S., *see* Narwal, S. S.
McGowan, M., Armstrong, M. J. and Corrie, J. A. A rapid fluorescent-dye technique for measuring root length, 209

Nambiar, P. T. C., Rao, M. R., Reddy, M. S., Floyd, C. N., Dart, P. J. and Willey, R. W. Effect of intercropping on nodulation and N_2-fixation by groundnut, 79
Nambiar, P. T. C., Ravishankar, H. N. and Dart, P. J. Effect of *Rhizobium* numbers on nodulation and dinitrogen fixation in groundnut, 243
Narwal, S. S., Malik, D. S. and Malik, R. S. Studies in multiple cropping. II. Effects of preceding grain legumes on the nitrogen requirement of wheat, 143
Nash, P., *see* Felker, Peter
Nigam, S. N., Ramantha Rao, V. and Gibbons, R. W. Utilization of natural hybrids in the improvement of groundnuts (*Arachis hypogaea*), 355

Ogunbodede, B. A., *see* Fakorede, M. A. B.
Oosterhuis, D. M. and Bate, G. C. Nitrogen uptake of field-grown cotton. II. Nitrate reductase activity and petiole nitrate concentration as indicators of plant nitrogen status, 103
Oosterhuis, D. M., Chipamaunga, J. and Bate, G. C. Nitrogen uptake of field-grown cotton. I. Distribution in plant components in relation to fertilization and yield, 91
Osborn, J. F., *see* Felker, Peter

Parker, J. M. H., *see* Vernon, R.
Pearce, S. C., *see* Gilliver, B.

Rajendrudu, G., Singh, M. and Williams, J. H. Hydraulic press measurements of leaf water potential in groundnuts, 287
Ramanatha Rao, V., *see* Nigam, S. N.
Rao, M. R. and Willey, R. W. Effects of genotype in cereal/pigeonpea intercropping on the alfisols of the semi-arid tropics of India, 67
Rao, M. R., *see* Nambiar, P. T. C.
Ravishankar, H. N., *see* Nambiar, P. T. C.
Reddy, M. S., *see* Nambiar, P. T. C.
Rhodes, E. R. Performance of cowpeas on an inland valley swamp in the dry season in Sierra Leone, 179
Roche, L. Review of *Plantation Forestry in the Tropics*, by J. Evans, 200
Ryder, K. Calculators – How to get the answers right, 15

Sastry, P. V. S. S., *see* Kumar Rao, J. V. D. K.
Sharma, B., *see* Kant, K.
Shrestha, G. K. Effects of spacing and nitrogen fertilizer on 'Pusa Sawani' okra (*Abelmoschus esculentus*) in Nepal, 239
Sikder, H. P. Effects of cropping seasons and temperatures on the dormancy of rice (*Oryza sativa*) seeds, 349
Simonds, N. W. Review of *An Adventure in Applied Science: a History of the International Rice Research Institute*, by R. F. Chandler, 278
Simmonds, N. W. Review of *Building a Sustainable Society*, by Lester R. Brown, 111
Simmonds, N. W. Review of *Strategies of Plant Reproduction*, ed. by W. Meudt, 279
Simpson, K. Review of *Fertilizing for Maximum Yield*, by G. W. Cooke, 361
Simpson, K. Review of *Soils and the Environment*, by Gerald W. Olson, 112
Singh, C. M., *see* Guleria, W. S.
Singh, M., *see* Rajendrudu, G.
Singh, S. P., *see* Yadav, S. K.
Smith, M. A. and Whiteman, P. C. Evaluation of tropical grasses in increasing shade under coconut canopies, 153

Tyagi, M. C., *see* Kant, K.

Van Emden, H. F. Review of *A Growing*

Problem. Pesticides and the Third World Poor, by David Bull, 280
Van Emden, H. F. Review of *Biological Control*, by Robert van den Bosch, P. S. Messenger and A. P. Gutierrez, 280
Van Emden, H. F. Review of *Insects, Experts and the Insecticide Crisis*, by John H. Perkins, 280
Vernon, R. and Parker, J. M. H. Maize/weed competition experiments: implications for tropical small-farm weed control research, 341

Wahua, T. A. T. Nutrient uptake by intercropped maize and cowpeas and a concept of Nutrient Supplementation Index (NSI), 263
Watson, G. A. Development of mixed tree and food crop systems in the humid tropics: a response to population pressure and deforestation, 311
Watts Padwick, G. Fifty years of *Experimental Agriculture*. II. The maintenance of soil fertility in tropical Africa: a review, 293
Webster, C. C. Review of *Multiple Cropping and Tropical Farming Systems*, by W. C. Beets, 362
Whiteman, P. C., *see* Smith, M. A.
Willey, R. W., *see* Nambiar, P. T. C.
Willey, R. W., *see* Rao, M. R.
Williams, J. H., *see* Rajendrudu, G.
Wise, W. S. Review of *Agricultural Research Policy*, by V. W. Ruttan, 199
Wise, W. S. Review of *Economic Analysis of Agricultural Projects*, by J. P. Gittinger, 281

Yadav, S. K., Bhan, V. M. and Singh, S. P. Crop–weed competition studies in mung beans (*Vigna radiata*), 337